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Discussions

Interactive comment on "A global analysis of climate-relevant aerosol properties retrieved from the network of GAW near-surface observatories" *by* Paolo Laj et al.

Anonymous Referee #2

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Referee comment to "A global analysis of climate-relevant aerosol properties retrieved from the network of GAW near-surface observatories" by Laj et al.

Overall comment: This paper provides the full technical descriptions and overall summaries of the in-situ aerosol primary datasets (total number concentration, scattering and absorption coefficients) from a global network of near-surface aerosol monitoring stations organized and maintained by the authors. The dataset itself will play a central role in evaluating the accuracy of aerosol models used for climate simulation. The dataset demonstrated for the first time the decadal decreasing trends in surface aerosol concentration over the globe. This should be important as quantitative evidence of the

overall outcome of the pollution mitigation efforts in many countries performed in this period. It should be published in any case.

Major critical comment: I recommend the authors remove/shrink the presentations and discussion on the "comparison with models" (section 6.2.4, Figure 8) which may distract the reader's attention from the main story of this paper. Those results can be included in the companion papers (Glib et al., Morthier et al. submitted). The model results without descriptions of the underlying assumptions (i.e., details of parameterization, emission) are not very informative to me.

Minor comments: L149. "45% of the variance": Do you mean here the inter-model variance? Please be more specific.

L156. "important" here is too colloquial. Please remove or reword it.

Table 1. "Hyphen symbol" is misused as "Minus symbol" at several places in Table 1. Please correct.

L270. Define the acronym "SARGAN" here.

L358. Define "AE31" or refer to Table 2 here.

L440. Is there any specific intention to use brackets around "product"?

L531. Define "N". I suppose it means particle number concentration.

The section titles 6.2.1.∼6.2.2 are missing. Please check.